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*f*ew things are as important today as the air we breathe.
That's why the Ministry of Environment and Energy
constantly monitors the levels of air pollutants in Ontario
and shares this information with you.

Ontario's **Air** Quality

**CARBON
MONOXIDE
CO**

**NITROGEN
DIOXIDE
NO₂**

**SULPHUR
DIOXIDE
SO₂**

**SUSPENDED
PARTICLES
SP**

**TOTAL REDUCED
SULPHUR
TRS**

**OZONE
O₃**

 **Ontario**

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Air Quality Index

The Air Quality Index (AQI) measures and reports on the six most common urban air pollutants. This pamphlet explains what these pollutants are; what are the major sources of each and the potential effect each has on the environment and human health.

The AQI helps you to understand air pollution, how to protect yourself and how to do something about it. Our automatic air monitoring stations are constantly analyzing the air and reporting their findings. We share these findings with you in news and weather reports.

Air Quality Advisory

In Ontario, Environment Canada and the Ontario Ministry of the Environment and Energy jointly issue air quality advisories when widespread elevated air pollution levels are forecast due to ground level ozone. The advisories, introduced in 1993, build on the existing Air Quality Index system and cover southern Ontario (this program was extended to North Bay and Sudbury in 1994). During the advisory, people are encouraged to limit activities which contribute to air pollution, such as unnecessary trips in the car, using their gas-powered lawn mowers, etc. In other words, they are asked to *Spare the Air*. People with respiratory problems are also encouraged to be aware of air pollution and limit their outdoor activities if necessary.

The Air Quality Index at a Glance

Index / Category	CO Carbon Monoxide	NO₂ Nitrogen Dioxide	SO₂ Sulphur Dioxide
100+ Very Poor	Increasing symptoms in non-smokers with heart disease; blurred vision; some clumsiness	Increasing sensitivity for asthmatics and people with bronchitis	Increasing sensitivity for asthmatics and people with bronchitis
50 - 99 Poor	Increased symptoms in smokers with heart disease	Air smells and looks brown. Some increase in bronchial reactivity in asthmatics	Odors; increasing vegetation damage
32 - 49 Moderate	Blood chemistry changes, but no noticeable impairment	Odor	Damages some vegetation
16 - 31 Good	No known harmful effects	Slight odor	Damages some vegetation in combination with ozone
0 - 15 Very Good	No known harmful effects	No known harmful effects	No known harmful effects

New!

The Ministry of Environment and Energy (MOEE) now provides AQI readings for your area, updated once a day, on its home page. Visit us at: <http://www.ene.gov.on.ca>. Daily AQI values are also available from the MOEE by calling (416) 246-0411 in Metro Toronto or toll free at 1-800-387-7768 (English) or 1-800-221-8852 (French).



SP**Suspended Particles**

Increasing sensitivity for asthmatics and people with bronchitis

Decreased visibility; soiling evident

Some decrease in visibility

No known harmful effects

No known harmful effects

SO₂ + SP

(as measured by the API)

Significant effects for asthmatics and people with bronchitis

Increased symptoms for people with chronic lung disease

Damages vegetation (i.e. tomatoes, white beans) due to sulphur dioxide

No known harmful effects

No known harmful effects

TRS**Total Reduced Sulphur**

Severe odor; some people may experience nausea and headaches

Strong odor

Odor

Slight odor

No known harmful effects

O₃**Ozone**

Serious respiratory effects, even during light physical activity; people with heart/lung disorders at high risk; more vegetation damage

Sensitive people may experience irritation when breathing and possible lung damage when physically active; people with heart/lung disorders at greater risk; damage to some plants

Respiratory irritation in sensitive people during vigorous exercise; people with heart/lung disorders at some risk; damages very sensitive plants

No known harmful effects

No known harmful effects

Please note:

For more information on air quality issues or additional copies of this brochure, please phone the Public Information Centre at its new number (416) 325-4000 or toll free (from outside the 416 area) at 1-800-565-4923.

A colorless, odorless, tasteless gas which mostly comes from automobile emissions. CO is a problem if it enters the blood stream — it may reduce the delivery of oxygen to the organs and tissues of the body, especially the brain. One of the first symptoms of CO poisoning is blurred vision and clumsiness. This occurs at very high concentrations. However, lower concentrations can cause discomfort for people with heart or lung disease.

**CARBON
MONOXIDE
CO**

A toxic, irritating gas that is emitted by all combustion processes (e.g., heating systems, cars, trucks). In combination with water, it can form acid rain. It helps form smog and acid aerosols. Acid aerosols are very, very small particles with NO₂ attached to them. They can be inhaled and cause lung irritation. In general, nitrogen dioxide can irritate the lungs and lower resistance to respiratory infection. It also can damage materials (i.e., corrosion and fading) and vegetation.

**NITROGEN
DIOXIDE
NO₂**

This colorless gas smells like burnt matches. Health effects associated with exposure to high concentrations of SO₂ include breathing discomfort, respiratory illness and aggravation of existing lung and heart disease. People with asthma, chronic lung disease or heart disease are the most sensitive to SO₂. It also damages leaves on trees and agricultural crops. In addition, SO₂ (along with NO_x) contributes to acid rain (which has a number of environmental effects including lake acidification, corrosion and haze). Like nitrogen dioxide, SO₂ helps form acid aerosols, which are a lung irritant.

**SULPHUR
DIOXIDE
SO₂**

These are small particles of solid or liquid matter that stay suspended in the air in the form of dust, mist, aerosols, smoke, fumes, soot, etc. Particles less than 10 microns in diameter (also called inhalable particulates, or PM-10) can penetrate deep into the lungs and contribute to lung disease. Corrosion, material soiling, vegetation damage and visibility reduction are additional effects of suspended particles.

**SUSPENDED
PARTICLES
SP**

These sulphur-containing compounds (such as hydrogen sulphide) come from industrial sources such as pulp and paper mills, coke ovens and refineries. They also come from natural sources, such as sulphur springs. TRS compounds are not normally considered a health hazard; however, they are the primary cause of odors (rotten egg smell). Very high concentrations may cause nausea or headaches.

**TOTAL REDUCED
SULPHUR
TRS**

A colorless gas with a strong smell that is produced by the sun's photochemical action on hydrocarbons and nitrogen oxides. It is the biggest part of photochemical smog. Ozone irritates the lungs and can make breathing difficult. Exposure to high concentrations of ozone results in chest tightness, coughing and wheezing. It is responsible each year for agricultural crop loss in Ontario and causes noticeable leaf damage. More than 50 per cent of Ontario's ozone comes from sources in the United States.

**OZONE
O₃**

NOTE: ground level ozone (O₃) and the thinning ozone layer are often confused. Ozone in the stratosphere (20 to 50 km above the Earth's surface) is naturally created and screens us from harmful ultraviolet radiation. Ground level ozone (described above) is harmful to plants, animals and humans.

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